

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

WASTE UTILIZATION, (ACRE)

Code 633

DEFINITION

Using agricultural waste or other waste on land in an environmentally acceptable manner while maintaining or improving soil and plant resources.

PURPOSE

To safely use wastes to provide fertility for crop, forage, or fiber production; to improve or maintain soil structure; to prevent erosion; and to safeguard water resources.

CONDITIONS WHERE PRACTICE APPLIES

On soils and vegetation suitable for the use of waste as a fertilizer. This includes waste from farm, feedlot, and dairy operations; municipal treatment plants; and agricultural processing plants.

FEDERAL, STATE, AND LOCAL LAWS

This standard is in addition to all federal, state, and local laws governing waste management, pollution abatement, and health and safety. The owner shall be responsible for obtaining all required permits and for compliance with such laws and regulations. Certification of compliance with this standard and specification DOES NOT ensure compliance with other federal, state, and local requirements. Some of the state laws and regulations are filed in Chapter 1, Agricultural Waste Management Field Handbook (AWMFH).

Any work involving the discharge of dredged or fill material into wetlands or

other waters of the United States may require a permit according to Section 404 of the Clean Water Act.

PLANNING CONSIDERATIONS

The amount of additional water and minerals that plants can use or tolerate are the basic considerations. The following items should be considered when evaluating plants for their use in waste management systems:

1. water and nutrient requirements and tolerances,
2. season of growth,
3. effect of waste on plant quality,
4. disease tolerance, and
5. crop management system

This standard applies to the use of agricultural waste and/or manure to supplement the crop nutrient needs for N, P₂O₅, and K₂O. For guidance in nutrient management refer to Conservation Practice Standard, Nutrient Management (590). In order to properly utilize the nutrients, the following components should be included in the waste/manure utilization plan:

1. Farmer decisions on acres he/she plans to apply waste/manure each year; including location, method, and time of application.
2. Manure tests are recommended, but estimated amount of nutrients available as N, P₂O₅, and K₂O may be used if results are unavailable. Design values may be found in Chapter 4, Agricultural Waste

Management Field Handbook (AWMFH).

3. Crop needs in terms of N, P₂O₅, and K₂O. These values may be found in Chapter 10, AWMFH.
4. Acres needed to utilize the wastes per each nutrient.
5. Test soil at least once every 3-4 years.
6. Other additional information such as time, labor, and equipment needed to implement the utilization plan.
7. Consider nutrient credits from previous years' legume crop and/or manure application.
8. If sheet and rill erosion are being controlled to an acceptable level, then P₂O₅, and K₂O may be over applied during the year of manure application as long as all or most of the excess nutrients will be used during the remaining years of the crop rotation. Such applications are best managed by soil and manure test results.
9. Excessive application of P₂O₅ and K₂O can create nutrient imbalance or contribute to salt problems under certain conditions.
10. Incorporation of manure or other forms of waste will generally retain more of the nitrogen if incorporated into the soil instead of being left on the surface. The incorporation operation may cause reduction in the amount of surface residue.
11. Manage manure and/or waste in a manner that reduces the odor production. Site location, seasonal wind direction, and manure management are important considerations to consider. For manure applications, consideration of the timing, season, weather conditions, holidays, neighborhood

events, and the method of application is recommended.

CRITERIA

1. Waste application to land must comply with federal, state, and local laws, whichever is most restrictive.
2. Waste utilization shall occur as part of a planned resource management system.
3. Applying wastes to frozen or snow-covered soil is not recommended. However, if it is necessary to do so, special provisions should be made to control runoff and pollution.
4. Wastes will not be applied to land adjacent to ponds, lakes, streams, wells, sinkholes, land subject to frequent flooding, or other areas where there is a probability of water pollution from runoff unless the waste is injected or otherwise incorporated within one day.
5. Application rates will be determined on (A) nutrient needs of crops and (B) soil nutrient availability of the area to be spread. Current soil test results shall be used if available. Additional information may be found in Chapter 11, AWMFH.
6. The need for additional commercial fertilizer should be based on soil and manure (waste) tests to assure proper balance of available nutrients for the crops to be grown. Calculate according to the procedures in Chapter 11, AWMFH and guidance in Conservation Practice Standard, Nutrient Management (590).
7. For the application of municipal and industrial wastes, the Iowa Administrative Code has specific rules and permit requirements. Refer to the Iowa Code for rules regarding application of municipal land. Refer to Chapter 6, AWMFH for some general

information regarding trace elements and heavy metals.

OPERATION AND MAINTENANCE

To properly operate the waste utilization component of the system it will be important to consider the nutrient levels for each application area, nutrient use of each crop, nutrient concentration of the manure (waste), and manure application rate. This will help the producer utilize the nutrients available in the manure and reduce the potential for environmental problems.